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EXAMINER	
ROST, ANDREW J	
ART UNIT	PAPER NUMBER
3753	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/529,002	HAEDICKE ET AL.	
	Examiner	Art Unit	
	Andrew J. Rost	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2010 and 27 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-18,20,22,23 and 25-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-18,20,22,23 and 25-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 May 2008* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/27/2010 has been entered.

2. This action is in response to the amendment filed 4/12/2010 and the RCE request filed 4/27/2010. No claims are currently amended. Claims 29 and 30 are newly added. Claims 1-13, 19, 21 and 24 have been canceled. Presently, claims 14-18, 20, 22, 23 and 25-30 are pending.

Response to Arguments

3. Applicants' arguments filed 4/12/2010 have been fully considered but they are not persuasive.

Applicants argue the rejection of claims 14, 15, 17, 18, 20, 23 and 26 under 35 U.S.C. 102(b) as being anticipated by Laurent (5,145,148) on page 8. It is considered that the mobile magnetic anchor is a combination of elements 20, 26, 54 and 56 (wherein elements 54 and 56 are both part of a pin 38). A portion of the element 54 is received within a depression of the element 20 (see figure 1) wherein element 56 is

secured to the outer surface of the element 54. It is considered that the interaction between the outer surfaces of element 56 and the wall of the through-bore provides a guiding section. Additionally, the outer portion of the armature 20 that contains axially extending slots 48 provides a similar guiding section that guides the anchor along the surface of the element that armature is held within. The guiding sections provide a close fit relationship with the inner circumferential surfaces of the element the armature is supported and housing 12 such that the mobile magnetic anchor is able to slide and such that a fluid is permitted to flow through channels 48 and 68.

Applicants argue the rejection of claims 14-18, 20, 23 and 26 under 35 U.S.C. 103(a) as being unpatentable over Kolze et al. (4,697,608) in view of Brehm et al. (5,636,828) on pages 8-9. It appears these arguments were previously addressed in the Office action dated 1/22/2010. In response to applicants' argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicants' disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The Brehm et al. reference was relied upon to teach the placement of a sliding bearing (made of metal) in order to ensure that the lower region of the mobile magnetic anchor is guided properly.

4. Since new grounds of rejection are necessitated by the additional claims proposed in the amendment filed 4/12/2010 and with the filing of the Request for Continued Examination on 4/27/2010, the instant Office action is made non-final.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first one of said two magnetic anchor guide sections being metal (claim 14) in addition to being positioned inside the gas tap (claim 20) and the second one of said two magnetic anchor guide sections being of a plastic material (claim 14) in addition to being positioned outside the gas tap (claim 20) **must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 recites the limitation “a first one of said two magnetic anchor guide sections” in lines 1-2. Claim 14 (claim from which claim 20 depends) recites the limitation "a first one of said two magnetic anchor guide sections" in lines 10-11. It is unclear if the "a first one of said two" in claim 20 is the same as the "a first one of said two" in claim 14 or if the "a first one of two" in claims 20 and 14 are different. Clarification is requested.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 14, 15, 17, 18, 20, 23, 26 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Laurent (5,145,148).

Regarding claims 14 and 26, Laurent discloses a valve assembly for closing a fluid path (path defined between inlet port 22 and outlet port 24) of a body (12) wherein the valve assembly has an armature housing (12 and element that supports spring 36 and defines a gap 46) that houses a mobile magnetic anchor (20, 26, 54 and 56), a valve seat (28) in which the mobile magnetic anchor includes a valve closing element (26) that presses on the valve seat to close the fluid path and at least two magnetic anchor guide sections (56 and the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 that are guided along the inner surface of the armature housing that defines a gap 46 wherein the guide sections are guide sections in as much as disclosed by applicant) that are spaced axially apart with the at least two magnetic anchor guides being made from different materials including one being made of a plastic (element 56 which guides the mobile magnetic anchor along a passage in element 12 is constructed of plastic as shown in figure 1) and with the other magnetic anchor guide being made of a metal (the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 is constructed of a metal as shown in figure 1) wherein the valve assembly further includes an electromagnetic coil (18) for operating the valve assembly with the electromagnetic coil

being arranged as a separate component outside of the armature housing (coil 18 is contained within a separate housing including element 16).

Note: the material flowing through the device is not given patentable weight unless the device is not capable of functioning with the intended fluid(s). See MPEP 2115.

In regards to claim 15, Laurent discloses the electromagnetic coil (18) is arranged gastight separately from the flow path (the coil 18 is encased within a separate housing including element 16 and a fluid that is able to enter gap 46 is contained by the use of seals 50 and 52).

In regards to claim 17, Laurent discloses the electromagnetic coil (18) to be arranged on the outside of the body (12).

In regards to claim 18, Laurent discloses a portion of the magnetic anchor protrudes outside of the body (portion 20 of the magnetic anchor is located outside of the body 12).

In regards to claim 20, Laurent discloses one of the at least two magnetic anchor guide sections is positioned within the body (guide 56 is located within the body 12) and the other of the at least two magnetic anchor guide sections is positioned outside the body (the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 that is guided along the inner surface of the armature housing that defines the gap 46 is located outside the body 12).

In regards to claim 23, Laurent discloses the armature housing to be formed in two separate parts including a section that is received within the body (12) and a section that is projecting from the body (element that supports spring 36 and defines a gap 46).

Regarding claim 29, Laurent discloses a valve assembly for closing a fluid path (path defined between inlet port 22 and outlet port 24) of a body (12) wherein the valve assembly has an armature housing (12 and element that supports spring 36 and defines a gap 46) that houses a mobile magnetic anchor (20, 26, 54 and 56), a valve seat (28) in which the mobile magnetic anchor includes a valve closing element (26) that presses on the valve seat to close the fluid path and at least two magnetic anchor guide sections (56 and the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 that are guided along the inner surface of the armature housing that defines a gap 46 wherein the guide sections are guide sections in as much as disclosed by applicant) that are spaced axially apart with the at least two magnetic anchor guides being made from different materials including one being made of a plastic (element 56 which guides the mobile magnetic anchor along a passage in element 12 is constructed of plastic as shown in figure 1) and with the other magnetic anchor guide being made of a metal (the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 is constructed of a metal as shown in figure 1) wherein at least one of the magnetic anchor guide sections directly guides the magnetic anchor (the close-fit relationship of the sleeve 56 with the bore wall 27 provides for a direct guiding of the magnetic anchor) and wherein the valve assembly further includes an electromagnetic coil (18) for operating the valve assembly with the

electromagnetic coil being arranged as a separate component outside of the armature housing (coil 18 is contained within a separate housing including element 16).

10. Claims 14-18, 20, 23, 26 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Hofmann et al. (WO99/37517 with US Patent 6,322,049 being used as the translation).

Regarding claims 14 and 26, Hofmann et al. disclose a valve assembly with a housing (combination of elements 11 and the valve body element 12) and having a mobile magnetic anchor (14 and 15); a valve seat (26); the mobile magnetic anchor including a valve closing element (28) which presses on the valve seat to close a fluid path (col. 2, lines 51-54); at least two magnetic anchor guide sections (inner surface of 11 along which the element 14 slides and guide 13 through which the narrowed portion 29 of the magnetic anchor translates) positioned and axially spaced apart in the armature housing with the at least two magnetic anchor guide sections being made of different materials, a first one (inner surface of 11 along which the element 14 slides) being made from metal (figure 1) and a second one (guide 13) being made from a plastic material (figure 1); an electromagnetic coil (19) for activating the mobile magnetic anchor and valve closing element to open the flow path when a voltage is applied (col. 3, lines 5-6) and the electromagnetic coil is arrange as a separate component outside the armature housing on a magnetic insert (18).

In regards to claim 15, Hofmann et al. disclose the electromagnetic coil is arrange gastight separately from the gas path (various seals prevent the flow of the fluid from the flow path to the coil; figure 1).

In regards to claim 16, Hofmann et al. disclose the electromagnetic coil is attached on the outside of the armature (figure 1) to easily detach therefrom (the coil is arranged on a separate component that is capable of being removed from the armature housing).

In regards to claim 17, Hofmann et al. disclose the electromagnetic coil is arranged outside the body defining the flow path.

In regards to claim 18, Hofmann et al. disclose at least a portion of the mobile magnetic anchor extends outside the body defining the flow pat (figure 1).

In regards to claim 20 (as best understood), Hofmann et al. disclose one of the magnetic anchor guide sections (guide 13) to be positioned within the body defining the flow path and the other magnetic guide section (surface of 11 that the element 14 slides) is positioned partially outside the body defining the flow path (figure 1).

In regards to claim 23, Hofmann et al. disclose the armature housing is formed in two separate parts with a first armature section (12) being set in the body that defines the flow path and the other (11) projecting from the body defining the flow path (figure 1).

Regarding claim 30, Hofmann et al. disclose a valve assembly with a housing (combination of elements 11 and the valve body element 12) and having a mobile magnetic anchor (14 and 15); a valve seat (26); the mobile magnetic anchor including a

valve closing element (28) which presses on the valve seat to close a fluid path (col. 2, lines 51-54); at least two magnetic anchor guide sections (inner surface of 11 along which the element 14 slides and guide 13 through which the narrowed portion 29 of the magnetic anchor translates) positioned and axially spaced apart in the armature housing with the at least two magnetic anchor guide sections being made of different materials, a first one (inner surface of 11 along which the element 14 slides) being made from metal (figure 1) and a second one (guide 13) being made from a plastic material (figure 1); an electromagnetic coil (19) for activating the mobile magnetic anchor and valve closing element to open the flow path when a voltage is applied (col. 3, lines 5-6) and the electromagnetic coil is mounted as a separate component on an outer circumference of the first magnetic anchor guide section (the coil is mounted on an outer circumference of the housing 11 wherein the inner surface of 11 along which 14 slides is considered the first magnetic anchor guide section).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 14-18, 20, 23, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolze et al. (4,697,608) in view of Brehm et al. (5,636,828).

Regarding claims 14 and 26, Kolze et al. discloses a valve assembly with a housing (12) having a passageway (as seen in Figs 4 & 6), comprising a valve for closing the gas path, wherein the valve includes an armature housing (58, 70) and having a mobile magnetic anchor (72) in said armature housing, a valve seat (portion of 70 on which the tip 80 seats in the closed position), said mobile magnetic anchor including a valve closing element which presses on said valve seat to close said passageway (tip 80 closes the flow path with contact to the valve seat), an electromagnetic coil (18) for activating said mobile magnetic anchor and valve closing element to close the passageway and said electromagnetic coil is arranged as a separate component outside of said armature housing on a magnetic insert (fig. 4 and 6) and a magnetic anchor guide (inner sidewall of housing 58 wherein the guide section is a guide section in as much as disclosed by applicant) made of a plastic material (figure 4). Kolze et al. does not disclose the use of a second magnetic anchor guide to be made of a metal. However, Brehm et al. teach the use of a bearing (38) along which

a mobile magnetic armature (17, 35) is guided (shaft portion 35 slides along the bearing 38, col. 2, lines 36-40) in order to ensure that the guidance of the lower region of the mobile magnetic anchor (35) is ensured within the electromagnetic valve assembly (col. 2, lines 43-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the valve assembly of Kolze et al. with a sliding bearing as taught by Brehm et al. in order to ensure that the lower region of the mobile magnetic anchor is guided properly.

Note: the material flowing through the device is not given patentable weight unless the device is not capable of functioning with the intended fluid(s). See MPEP 2115.

In regards to claim 15, Kolze et al. disclose the electromagnetic coil arranged separate from the passageway (figure 4).

In regards to claim 16, Kolze et al. disclose the electromagnetic coil outside of the armature housing and is able to be detached.

In regards to claim 17, Kolze et al. disclose the electromagnetic coil outside of the housing (12).

In regards to claim 18, Kolze et al. disclose the magnetic anchor to partially protrude outside of the housing (12).

In regards to claim 20, the modified Kolze et al. reference disclose one of the at least two magnetic anchor guide sections is positioned within the body (guide portion defined sliding bearing as taught by Brehm et al.) and the other of the at least two

magnetic anchor guide sections is positioned outside the body (guide portion defined by the inner sidewall of the armature housing 58).

In regards to claim 23, Kolze et al. disclose that the armature housing has one section set inside the housing (70) and another section projecting from the housing (58).

Regarding claim 29, Kolze et al. discloses a valve assembly with a housing (12) having a passageway (as seen in Figs 4 & 6), comprising a valve for closing the gas path, wherein the valve includes an armature housing (58, 70) and having a mobile magnetic anchor (72) in said armature housing, a valve seat (portion of 70 on which the tip 80 seats in the closed position), said mobile magnetic anchor including a valve closing element which presses on said valve seat to close said passageway (tip 80 closes the flow path with contact to the valve seat), an electromagnetic coil (18) for activating said mobile magnetic anchor and valve closing element to close the passageway and said electromagnetic coil is arranged as a separate component outside of said armature housing on a magnetic insert (fig. 4 and 6) and a magnetic anchor guide (inner sidewall of housing 58 wherein the guide section is a guide section in as much as disclosed by applicant) made of a plastic material (figure 4) wherein the magnetic anchor guide section directly guides the magnetic anchor (the upper portion 58 of the armature guide has a hollow tubular configuration with an armature member is slidably received therein in closely fitting arrangement; col. 5, lines 11-14). Kolze et al. does not disclose the use of a second magnetic anchor guide to be made of a metal. However, Brehm et al. teach the use of a bearing (38) along which a mobile magnetic armature (17, 35) is guided (shaft portion 35 slides along the bearing 38, col. 2, lines

36-40) in order to ensure that the guidance of the lower region of the mobile magnetic anchor (35) is ensured within the electromagnetic valve assembly (col. 2, lines 43-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the valve assembly of Kolze et al. with a sliding bearing as taught by Brehm et al. in order to ensure that the lower region of the mobile magnetic anchor is guided properly.

14. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laurent (5,145,148) in view of Grant et al. (5,188,017).

Laurent discloses a valve assembly for closing a fluid path (path defined between inlet port 22 and outlet port 24) of a body (12) wherein the valve assembly has a multi-piece armature housing (12 and element that supports spring 36 and defines a gap 46) that houses a mobile magnetic anchor (20, 26, 54 and 56), a valve seat (28) in which the mobile magnetic anchor includes a vale closing element (26) that presses on the valve seat to close the fluid path and at least two magnetic anchor guide sections (56 and the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 that are guided along the inner surface of the armature housing that defines a gap 46 wherein the guide sections are guide sections in as much as disclosed by applicant) that are spaced axially apart with the at least two magnetic anchor guides being made from different materials including one being made of a plastic (element 56 which guides the mobile magnetic anchor along a passage in element 12 is constructed of plastic as shown in figure 1) and with the other magnetic anchor guide being made of

a metal (the element that supports spring 36 and that guides 48 of the mobile magnetic anchor contact is constructed of a metal as shown in figure 1) wherein at least one of the magnetic anchor guide sections directly guides the magnetic anchor (the close-fit relationship of the sleeve 56 with the bore wall 27 provides for a direct guiding of the magnetic anchor) and wherein the valve assembly further includes an electromagnetic coil (18) for operating the valve assembly with the electromagnetic coil being arranged as a separate component outside of the armature housing (coil 18 is contained within a separate housing including element 16). Laurent does not disclose the use of a counter-anchor. However, Grant et al. teach the use of a counter-anchor (78) placed on the side of a mobile magnetic anchor opposite a valve seat in order to limit the stroke length of the mobile magnetic anchor in order to ensure a proper sealing of the valve (col. 5, lines 12-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the valve assembly of Laurent with a counter anchor as taught by Grant et al. in order to adjust the stroke path of the mobile magnetic armature.

15. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolze et al. (4,697,608) in view of Brehm et al. (5,636,828) and further in view of Grant et al. (5,188,017).

Kolze et al. in view of Brehm et al. disclose a valve assembly having a housing defining a flow path with an electromagnetic valve for closing the flow path wherein the electromagnetic valve has a multi-piece armature housing and having a mobile

magnetic anchor, a valve seat, the mobile magnetic anchor having a valve closing end which presses on the valve seat to close the flow path, at least two magnetic anchor guide sections with one being constructed of a plastic and a second being constructed of a metal (as taught by Brehm et al.) and an electromagnetic coil for activating the mobile magnetic anchor and valve closing element so that activation of the electromagnetic coil opens the flow path with the electromagnetic coil being arranged as a separate component outside the armature housing. The modified Kolze et al. reference does not disclose the use of a counter-anchor. However, Grant et al. teach the use of a counter-anchor (78) placed on the side of a mobile magnetic anchor opposite a valve seat in order to limit the stroke length of the mobile magnetic anchor in order to ensure a proper sealing of the valve (col. 5, lines 12-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the valve assembly of the modified Kolze et al. reference with a counter anchor as taught by Grant et al. in order to adjust the stroke path of the mobile magnetic armature.

16. Claims 14, 15, 17, 18, 20, 23 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaselow (4,830,602) in view of Laurent (5,145,148)

Regarding claims 14, 27 and 28, Kaselow discloses a valve assembly having an electromagnetic valve (15), a tap axle (9) being located within a flow path of a fluid through a valve body (13) wherein the tap axle is pivoted (rotated about an axis) to permit or prevent a flow of fluid through the valve body. Kaselow does not expressly

disclose the structure of the electromagnetic valve. However, Laurent discloses a valve assembly for closing a fluid path (path defined between inlet port 22 and outlet port 24) of a body (12) wherein the valve assembly has an armature housing (12 and element that supports spring 36 and defines a gap 46) that houses a mobile magnetic anchor (20, 26, 54 and 56), a valve seat (28) in which the mobile magnetic anchor includes a vale closing element (26) that presses on the valve seat to close the fluid path and at least two magnetic anchor guide sections (56 and the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 that are guided along the inner surface of the armature housing that defines a gap 46 wherein the guide sections are guide sections in as much as disclosed by applicant) that are spaced axially apart with the at least two magnetic anchor guides being made from different materials including one being made of a plastic (element 56 which guides the mobile magnetic anchor along a passage in element 12 is constructed of plastic as shown in figure 1) and with the other magnetic anchor guide being made of a metal (the element that supports spring 36 and that guides 48 of the mobile magnetic anchor contact is constructed of a metal as shown in figure 1) wherein the valve assembly further includes an electromagnetic coil (18) for operating the valve assembly with the electromagnetic coil being arranged as a separate component outside of the armature housing (coil 18 is contained within a separate housing including element 16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the electromagnetic valve of Kaselow as the electromagnetic valve in assembly as taught by Laurent in order to provide an

electromagnetic valve that can be assembled in pieces for ease of manufacturing the electromagnetic valve.

Note: the material flowing through the device is not given patentable weight unless the device is not capable of functioning with the intended fluid(s). See MPEP 2115.

In regards to claim 15, Laurent discloses the electromagnetic coil (18) is arranged gastight separately from the flow path (the coil 18 is encased within a separate housing including element 16 and a fluid that is able to enter gap 46 is contained by the use of seals 50 and 52).

In regards to claim 17, Laurent discloses the electromagnetic coil (18) to be arranged on the outside of the body (12).

In regards to claim 18, Laurent discloses a portion of the magnetic anchor protrudes outside of the body (portion 20 of the magnetic anchor is located outside of the body 12).

In regards to claim 20, Laurent discloses one of the at least two magnetic anchor guide sections is positioned within the body (guide 56 is located within the body 12) and the other of the at least two magnetic anchor guide sections is positioned outside the body (the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 is located outside the body 12).

In regards to claim 23, Laurent discloses the armature housing to be formed in two separate parts including a section that is received within the body (12) and a section that is projecting from the body (element that supports spring 36 and defines a gap 46).

Regarding claim 29, Kaselow discloses a valve assembly having an electromagnetic valve (15), a tap axle (9) being located within a flow path of a fluid through a valve body (13) wherein the tap axle is pivoted (rotated about an axis) to permit or prevent a flow of fluid through the valve body. Kaselow does not expressly disclose the structure of the electromagnetic valve. However, Laurent discloses a valve assembly for closing a fluid path (path defined between inlet port 22 and outlet port 24) of a body (12) wherein the valve assembly has an armature housing (12 and element that supports spring 36 and defines a gap 46) that houses a mobile magnetic anchor (20, 26, 54 and 56), a valve seat (28) in which the mobile magnetic anchor includes a valve closing element (26) that presses on the valve seat to close the fluid path and at least two magnetic anchor guide sections (56 and the element being defined as the outer portion of the anchor 20 that contains axially extending slots 48 that are guided along the inner surface of the armature housing that defines a gap 46 wherein the guide sections are guide sections in as much as disclosed by applicant) that are spaced axially apart with the at least two magnetic anchor guides being made from different materials including one being made of a plastic (element 56 which guides the mobile magnetic anchor along a passage in element 12 is constructed of plastic as shown in figure 1) and with the other magnetic anchor guide being made of a metal (the element that supports spring 36 and that guides 48 of the mobile magnetic anchor contact is constructed of a metal as shown in figure 1) wherein at least one of the magnetic anchor guide sections directly guides the magnetic anchor (the close-fit relationship of the sleeve 56 with the bore wall 27 provides for a direct guiding of the magnetic anchor)

and wherein the valve assembly further includes an electromagnetic coil (18) for operating the valve assembly with the electromagnetic coil being arranged as a separate component outside of the armature housing (coil 18 is contained within a separate housing including element 16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the electromagnetic valve of Kaselow as the electromagnetic valve in assembly as taught by Laurent in order to provide an electromagnetic valve that can be assembled in pieces for ease of manufacturing the electromagnetic valve.

Note: the material flowing through the device is not given patentable weight unless the device is not capable of functioning with the intended fluid(s). See MPEP 2115.

17. Claims 14-18, 20, 23 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaselow (4,830,602) in view of Kolze et al. (4,697,608) and further in view of Brehm et al. (5,636,828)

Kaselow discloses a valve assembly having an electromagnetic valve (15), a tap axle (9) being located within a flow path of a fluid through a valve body (13) wherein the tap axle is pivoted (rotated about an axis) to permit or prevent a flow of fluid through the valve body. Kaselow does not expressly disclose the structure of the electromagnetic valve. However, Kolze et al. discloses a valve assembly with a housing (12) having a passageway (as seen in Figs 4 & 6), comprising a valve for closing the gas path, wherein the valve includes an armature housing (58, 70) and having a mobile magnetic

anchor (72) in said armature housing, a valve seat (portion of 70 on which the tip 80 seats in the closed position), said mobile magnetic anchor including a valve closing element which presses on said valve seat to close said passageway (tip 80 closes the flow path with contact to the valve seat), an electromagnetic coil (18) for activating said mobile magnetic anchor and valve closing element to close the passageway and said electromagnetic coil is arranged as a separate component outside of said armature housing on a magnetic insert (fig. 4 and 6) and a magnetic anchor guide (inner sidewall of housing 58) made of a plastic material (figure 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the electromagnetic valve of Kaselow as the electromagnetic valve in assembly as taught by Kolze et al. in order to provide an electromagnetic valve that can be assembled in pieces for ease of manufacturing the electromagnetic valve. The modified Kaselow reference does not disclose the use of a second magnetic anchor guide to be made of a metal. However, Brehm et al. teach the use of a bearing (38) along which a mobile magnetic armature (17, 35) is guided (shaft portion 35 slides along the bearing 38, col. 2, lines 36-40) in order to ensure that the guidance of the lower region of the mobile magnetic anchor (35) is ensured within the electromagnetic valve assembly (col. 2, lines 43-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the valve assembly of the modified Kaselow reference with a sliding bearing as taught by Brehm et al. in order to ensure that the lower region of the mobile magnetic anchor is guided properly.

Note: the material flowing through the device is not given patentable weight unless the device is not capable of functioning with the intended fluid(s). See MPEP 2115.

In regards to claim 15, Kolze et al. disclose the electromagnetic coil arranged separate from the passageway (figure 4).

In regards to claim 16, Kolze et al. disclose the electromagnetic coil outside of the armature housing and is able to be detached.

In regards to claim 17, Kolze et al. disclose the electromagnetic coil outside of the housing (12).

In regards to claim 18, Kolze et al. disclose the magnetic anchor to partially protrude outside of the housing (12).

In regards to claim 20, the modified Kaselow reference disclose one of the at least two magnetic anchor guide sections is positioned within the body (guide portion defined sliding bearing as taught by Brehm et al.) and the other of the at least two magnetic anchor guide sections is positioned outside the body (guide portion defined by the inner sidewall of the armature housing 58 as taught by Kolze et al.).

In regards to claim 23, Kolze et al. disclose that the armature housing has one section set inside the housing (70) and another section projecting from the housing (58).

Regarding claim 29, Kaselow discloses a valve assembly having an electromagnetic valve (15), a tap axle (9) being located within a flow path of a fluid through a valve body (13) wherein the tap axle is pivoted (rotated about an axis) to permit or prevent a flow of fluid through the valve body. Kaselow does not expressly

disclose the structure of the electromagnetic valve. However, Kolze et al. discloses a valve assembly with a housing (12) having a passageway (as seen in Figs 4 & 6), comprising a valve for closing the gas path, wherein the valve includes an armature housing (58, 70) and having a mobile magnetic anchor (72) in said armature housing, a valve seat (portion of 70 on which the tip 80 seats in the closed position), said mobile magnetic anchor including a valve closing element which presses on said valve seat to close said passageway (tip 80 closes the flow path with contact to the valve seat), an electromagnetic coil (18) for activating said mobile magnetic anchor and valve closing element to close the passageway and said electromagnetic coil is arranged as a separate component outside of said armature housing on a magnetic insert (fig. 4 and 6) and a magnetic anchor guide (inner sidewall of housing 58) made of a plastic material (figure 4) wherein the magnetic anchor guide section directly guides the magnetic anchor (the upper portion 58 of the armature guide has a hollow tubular configuration with an armature member is slidably received therein in closely fitting arrangement; col. 5, lines 11-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the electromagnetic valve of Kaselow as the electromagnetic valve in assembly as taught by Kolze et al. in order to provide an electromagnetic valve that can be assembled in pieces for ease of manufacturing the electromagnetic valve. The modified Kaselow reference does not disclose the use of a second magnetic anchor guide to be made of a metal. However, Brehm et al. teach the use of a bearing (38) along which a mobile magnetic armature (17, 35) is guided (shaft portion 35 slides along the bearing 38, col.

2, lines 36-40) in order to ensure that the guidance of the lower region of the mobile magnetic anchor (35) is ensured within the electromagnetic valve assembly (col. 2, lines 43-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the valve assembly of the modified Kaselow reference with a sliding bearing as taught by Brehm et al. in order to ensure that the lower region of the mobile magnetic anchor is guided properly.

Note: the material flowing through the device is not given patentable weight unless the device is not capable of functioning with the intended fluid(s). See MPEP 2115.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew J. Rost whose telephone number is 571-272-2711. The examiner can normally be reached on 7:00 - 4:30 M-Th and 7:00 - 12:00 Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. J. R./
Examiner, Art Unit 3753

/John K. Fristoe Jr./
Primary Examiner, Art Unit 3753